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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,861	10/29/2003	Matthew J. Holcomb	004309.P023	9747

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EXAMINER

VIJAYAKUMAR, KALLAMBELLA M

ART UNIT	PAPER NUMBER
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1751

DATE MAILED: 04/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/697,861

Applicant(s)

HOLCOMB, MATTHEW J.

Examiner

Kallambella Vijayakumar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

- Claims 1-6 are currently pending with the application.
- The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.
- The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1, 3 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Seeber et al (US 5,314,714).

Seeber et al teach a process of increasing the density of the chevrel phase superconductors by adding low melting metallic additives forming a composite, wherein the metallic additives included

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"Gallium." The metallic additives were added in the amount of 0.5-20 wt% to a mixture containing chevrel phase precursors and then subjected to liquid phase sintering, or mixed with chevrel phase powder and isostatically pressed at elevated temperatures forming the composite with reduced porosity and improved critical density (Abstract, Col-2, Ln 32-41; Col-3, Ln 51-65; Col-4, Ln 10-16). The composition of the art composite and ratio between chevrel phase component and the metallic phase in the composite are identical to that by the applicants (Spec: US 2004/0192558; Para 0176) and the claimed proximity of the particles and their functionality in claims 1, 3 and 4 will be anticipated, because identical compositions have identical characteristics and properties. The art process meets the method of making the superconductor per claim-4. All the limitations of the instant claims are met.

The reference is anticipatory.

2. Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Dunand (US 6,630,427).

Dunand teaches a MgB₂ superconductor/metal matrix composite with improved performance containing MgB₂ superconductor that has been infiltrated with a metallic material component such as Ga, wherein the superconductive volume ranged between 20-90 vol% (Abstract, Col-5, Ln 5, Col-5, Ln 25-26, 53-54; Col-8, Ln 38-58; Col-11, Example-2). The composition of the art composite and ratio between MgB₂ and the metallic phase in the composite are identical to that by the applicants (Spec: US 2004/0192558; Para 0176) and the claimed proximity of the particles and their functionality in claims 1 and 3 will be anticipated, because identical compositions have identical characteristics and properties.

With regard to the method claims 4-5, the prior art teaches mixing the MgB₂ and the metal matrix powders in the proportions identical to that by the applicants and forming the composite (Col-11, Example-2). All the limitations of the instant claims are met.

The reference is anticipatory.

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
1. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dunand (US 6,630,427).

The disclosure on the composition and making of the MgB₂ superconductor/metal matrix composite as set in rejection-2 under 35 USC 102(e) are herein incorporated.

The prior art fails to teach forming a wire from the superconductor/metal composite per the claim.

However, the prior art teaches an elongated member/cylinder of superconductor/metal composite (Col-18, Ln 44-45) with improved predetermined configuration and performance of superconductor properties (Col-5, Ln 41-42 and 51-54), and further discloses the prior art interest in MgB₂ wires/tapes with high critical density (Page-2, references, particularly by Wang et al). It would be obvious to a person of ordinary skill in the art to fabricate/draw a wire from the MgB₂ cylinder of Dunand with reasonable expectation of success, because drawing superconductor wires from billets was a well known process in

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the art at the time of the disclosure of the invention by the applicants (Seeber et al; US 5,314,714; Col-2, Ln 36-41).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kallambella Vijayakumar whose telephone number is 571-272-1324. The examiner can normally be reached on 8-5.30 Mon-Thu, 8-4.30 Alt Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas McGinty can be reached on 571-272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KMV
March 20, 2006.

Douglas McGinty

DOUGLAS MCGINTY
SUPERVISORY PATENT EXAMINER

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